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2,508,073

BUFFING WHEEL

Filed Sept. 29, 1947

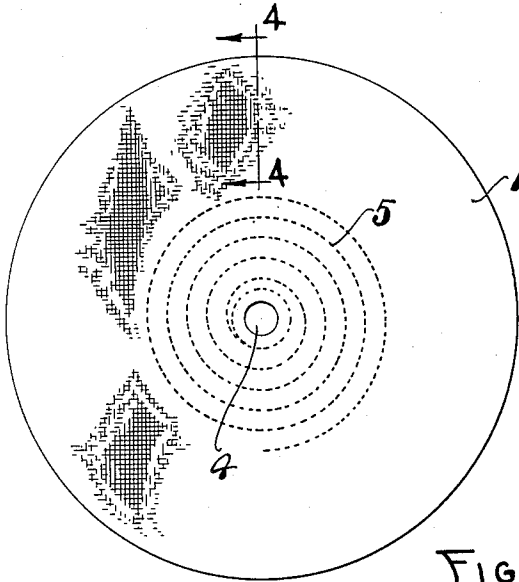


FIG. 1.

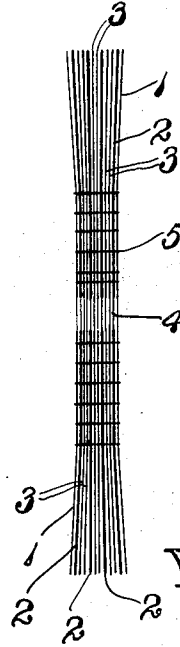


FIG. 2.

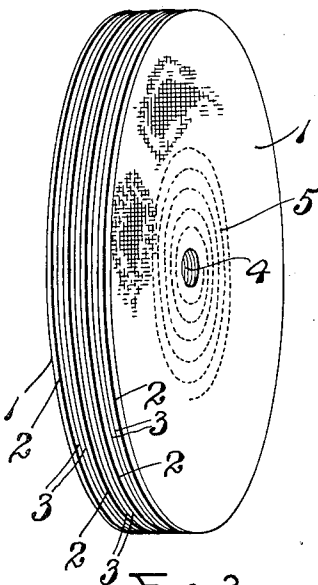


FIG. 3.

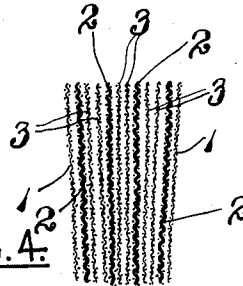


FIG. 4.

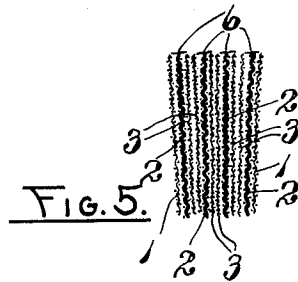


FIG. 5.

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BUFFING WHEEL

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2 Claims. (Cl. 51-193)

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This invention relates to buffing or polishing wheels, and is directed to a novel construction of such wheels which causes them to have greatly increased life of use and service. The wheel embodying the invention has the various laminae thereof secured together by conventional sewings or stitchings, but through the addition of treated laminae to the wheel, gives it much more body and in many operations, answers the same purpose as the conventional fully sewed wheels which are stitched to the outer periphery thereof; while in the present invention such stitching need extend only part way from the wheel center toward the outer periphery thereof. Also in the present invention between a plurality of the conventional cloth or ticking laminae used, there are introduced treated laminae of somewhat heavier material, which are impregnated with a liquid which upon drying becomes comparatively hard and serve to strongly reinforce the wheel against laminae separation because of high rotative speeds of the wheel in service hold the laminae against lateral separation.

Moreover, the peripheral surface of the wheel to which said treated laminae extend is rendered much more resistant to wear, and the head developed at the peripheral surface of the wheel, by reason of the invention, inhibits transfer of heat from the peripheral face of the wheel inwardly into the wheel fabric, thus materially reducing or preventing charring or other weakening of the fabric because of excessive heat and temperature.

Furthermore, with my invention, the head at the peripheral surfaces of the wheel serves as a barrier against the interior fabric of the wheel absorbing extra of the excess amounts of the buffing composition used, so that economy in the use of the buffing composition is materially increased. Further, the buff made in accordance with my invention is materially cleaner in working, as lint and dirt thrown off therefrom in service is reduced. And through such reduction, the health hazard to the operator is reduced because of the great lessening of lint and dirt from the wheel.

The invention has for its objects and purposes to provide a wheel of the type outlined which attains the desirable objects and functions which have been recited, and which wheel is very economically produced.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawing, in which:

Fig. 1 is a side elevation of the wheel made in accordance with my invention.

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Fig. 2 is a central vertical transverse section therethrough.

Fig. 3 is a perspective view.

Fig. 4 is a fragmentary enlarged transverse vertical section on the plane of the line 4-4 of Fig. 1, and

Fig. 5 is a like section illustrating the head produced at its outer peripheral surface.

Like reference characters refer to like parts in the different figures of the drawing.

The buffing or polishing wheel of my invention includes a desired number of laminae of cloth, circular in outline as shown. At the outer sides of the wheel the disk of cloth or fabric 1 is of a thin flexible character, generally made of cotton material. It is to be understood that fabric two can also be placed as an outside sheet interchangeable with fabric one. Immediately inside each of the outer disks or laminae 1, other disks or laminae 2 are located which are of a light canvas completely saturated and impregnated with a drying oil or synthetic resin of the alkyd type, or similar synthesized varnish having physical properties like those attributed to drying oil or alkyd resin. Such drying oils or synthetic resin varnishes become hardened, either on exposure to the atmosphere for a sufficient time, or upon proper application of temperature thereto. Such drying oils and resins are well known, having many uses, one of which is in paints so that the paint may be spread in liquid form and the oil on drying reduces the liquid paint to a hardened coating. Between the two outer laminae 2, there is then used alternately a plurality of laminae 3 with single lamina sheets 2 between the pluralities of such laminae. For example, the laminae or disks 3, shown in the illustration as two in number, are located between single disks 2 of the light canvas impregnated with a drying or hardening oil. It is however, to be understood that the number of laminae or disks 3 is not limited to two. In practice the minimum used is two, but it may be increased. At the maximum it has been found that there should not be more than twelve of the laminae 3 between any two of the laminae 2, and in general the maximum number stated will be sparingly used, and for the best operations and results two or three thereof, and in some cases four, five or six, will secure better results than the larger numbers of such laminae 3. The laminae 3 are of the same material as the outside disks 1, a soft, thin, flexible, preferably cotton fabric.

Each of the laminae or disks used has a central opening or an arbor hole 4 therethrough.

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They are permanently secured together by stitching as shown at 5, which while shown of a spiral form may be varied. The stitching as shown need not extend radially outward to more than approximately one-half of the radius of the wheel. Of course, such connecting stitching of the type shown or other stitching may be extended farther outward and even to the periphery of the wheel, but it should be stated that the variation of sewing should depend upon the type of work being finished. The high speed of rotation at which the wheel is turned in operation, and the relatively greater weight and stiffness of the laminae 2, causes such laminae to tend to take flat planes perpendicular to the rotating axis of the wheel, such that they hold the wheel to form at its outer portions with great rigidity.

The wheel as described is mounted on a shaft and driven at high speed in the usual manner. For example, wheels of this character may be driven at a speed approaching 2500 R. P. M. When pressed against the articles which are processed thereby, or conversely, such articles pressed against the peripheral surfaces of the wheel, the treated and impregnated laminae 2 are flattened laterally in both directions at their outer edges, as indicated at 6 in Fig. 5, extending either wholly or partly over the intervening laminae 3 between them or at least over the laminae 3 next adjacent. There is also formed in a measure a protective insulation against the transference of heat radially inward, with a control thereof which greatly reduces subjecting the edge portions of the intervening laminae 3 to harmful or destructive temperatures. The life of the wheel in service is very greatly increased. In extensive tests the effective serviceable life of the wheel made in accordance with my invention is greatly increased over the conven-

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tional buffing wheels used to serve the same purpose. The cost of production is comparable to, but slightly greater than the conventional type which is largely used.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. A buffing wheel comprising a plurality of flat disks of fabric located side by side some of said disks being impregnated with a drying oil and others of said disks being untreated, said untreated disks being interspersed between said impregnated disks, all of said disks being fastened together near their centers, their peripheral portions being unconnected.

2. The elements of claim 1 in which the untreated disks are greater in number than the impregnated disks.

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